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EXAMINER

THOMPSON, JAMES A

ART UNIT

PAPER NUMBER

2625

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

09/788,672

Applicant(s)

OYANAGI ET AL.

Examiner

James A. Thompson

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION*****Response to Arguments***

1. Applicant's arguments filed 27 December 2006 have been fully considered but they are not persuasive. Examiner accepts Applicant's Statement of the Substance of the Interview of 04 December 2006 and agrees that the present amendments to the claims overcome the combination of Chen (USPN 5,684,934), Ikoma (USPN 5,056,018) and Sakurai (USPN 5,924,802). However, a further search has been performed and additional prior art has been discovered which, when combined with Sakurai, renders the presently recited claims obvious to one of ordinary skill in the art at the time of the invention. Accordingly, new prior art rejections are set forth in detail below. Since the new grounds of rejection have been necessitated by the present amendments to the claims, the present action is made final.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 23-24, 26, 28, 31-32, 34, 36 and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kadota (US Patent 5,684,934) in view of Sakurai (US Patent 5,924,802).**

**Regarding claims 23 and 31:** Kadota discloses a printer (figure 2A of Kadota) comprising a detector (figure 2A(35) of Kadota) configured to detect a printing error (column 10, lines 5-8 of Kadota) regardless of whether a transmission of printing data has started (column 10, lines 1-13 of Kadota – *monitoring of status data is performed even before any transmission of printing data*); an interface (figure 2A(45) of Kadota) configured to receive the printing data (column 7, lines 41-43 of Kadota); a data buffer (figure 2A(46) of Kadota) configured to temporarily store the printing data received from the computer (column 7, lines 41-43 of Kadota); a clearer (figure 2A(49) and column 7, lines 58-61 of Kadota) configured to clear the data buffer if the detector detects the printing error (column 10, lines 1-8 of Kadota) after the transmission of the printing data has started (column 10, lines 35-52 of Kadota), and not to clear the data buffer if the detector detects the printing error when the transmission of the printing data

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has not started (column 10, lines 29-34 of Kadota), wherein the detector is upstream of the data buffer (element 35 (detector) is clearly upstream of element 46 (buffer) in figure 2A of Kadota).

Kadota does not disclose expressly that said printing error is specifically that a printer cable is unplugged, where the printer cable is adapted to connect to a computer.

Sakurai discloses determining a printing error if a printer cable is unplugged, the printer cable adapted to connect to a computer (figure 5(S105) and column 6, lines 5-10 of Sakurai).

Kadota and Sakurai are combinable because they are from the same field of endeavor, namely the control and processing of printer data under conditions of printer error. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the printer error taught by Kadota be specifically that a printer cable, which is connected to a computer, is unplugged, as taught by Sakurai. The suggestion for doing so would have been that an unplugged printer cable is clearly an error condition since a printer cannot properly receive the print data from the host computer if there is no printer cable connection. Therefore, it would have been obvious to combine Sakurai with Kadota to obtain the invention as specified in claims 23 and 31.

Further regarding claim 31: The printer of claim 23 performs the method of claim 31.

**Regarding claims 24 and 32:** Kadota discloses an initializer (figure 2A(40(relevant portion of embodied software)) and column 7, lines 51-57 of Kadota) configured to initialize the interface for receiving the printing data when clearing the buffer (column 10, lines 38-45 of Kadota).

**Regarding claims 26 and 34:** Kadota discloses a print start detector (figure 2A(40(relevant portion of embodied software)) and column 7, lines 51-57 of Kadota) configured to detect a start of the transmission of the printing data in accordance with a start signal which is received from the computer (column 10, lines 9-14 of Kadota).

**Regarding claims 28 and 36:** Kadota does not disclose expressly that the start signal is a device ID request which the computer transmits for confirming the model of the printer.

Sakurai discloses that the start signal is a device ID request which the computer transmits for confirming the model of the printer (column 4, lines 4-13 of Sakurai).

Kadota and Sakurai are combinable because they are from the same field of endeavor, namely the control and processing of printer data under conditions of printer error. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use a device ID request for the start signal, as taught by Sakurai. The motivation for doing so would have been to be able to print images in accordance with the type of options (column 4, lines 10-13 of Sakurai), such as automatic document feeding, double-sided printer, and others (column 3, lines 33-41 of Sakurai). Therefore, it

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would have been obvious to combine Sakurai with Kadota to obtain the invention as specified in claims 28 and 36.

**Regarding claim 39:** Kadota discloses that the detector is spatially positioned in an upstream direction of the data buffer (element 35 (detector) is clearly upstream of element 46 (buffer) in figure 2A of Kadota), and wherein the printing data in the data buffer, where said printing data is downstream from the detector, is cleared by the clearer (column 10, lines 35-52 of Kadota).

**Regarding claim 40:** Kadota discloses that the detector detecting the printing error is positioned spatially upstream with respect to the data buffer (element 35 (detector) is clearly upstream of element 46 (buffer) in figure 2A of Kadota), and wherein the printing data in the data buffer, where said printing data is downstream from the detector, is cleared by the clearer (column 10, lines 35-52 of Kadota).

As discussed in the arguments regarding claims 23 and 31 above, the combination of Kadota in view of Sakurai teaches that said printing error is specifically an unplugged cable.

**4. Claims 25 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kadota (US Patent 5,684,934) in view of Sakurai (US Patent 5,924,802) and Oami (US Patent 5,413,419).**

**Regarding claims 25 and 33:** Kadota discloses clearing the data buffer when printing is stopped (column 10, lines 35-52 of Kadota).

Kadota in view Sakurai does not disclose expressly an ejector configured to eject paper stopped in printing operation when clearing the data buffer.

Oami discloses an ejector configured to eject paper when clearing the data buffer (figure 5(540, 543) and column 9, lines 41-48 of Oami).

Kadota in view Sakurai is combinable with Oami because they are from the same field of endeavor, namely the control and processing of printer data under conditions of printer error. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to eject the paper when the data buffer is cleared, as taught by Oami, said data buffer being cleared when the printing is stopped, as taught by Kadota. The motivation for doing so would have been that the data stored in the data buffer is no longer needed, thus it is more efficient in terms of memory to store only what is needed to recover from a printing error (column 3, lines 38-47 of Oami). Therefore, it would have been obvious to combine Oami with Kadota in view of Sakurai to obtain the invention as specified in claims 25 and 33.

**5. Claims 27 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kadota (US Patent 5,684,934) in view of Sakurai (US Patent 5,924,802) and Wheeler (US Patent 4,404,433).**

**Regarding claims 27 and 35:** Kadota in view of Sakurai does not disclose expressly that the detector monitors a voltage of a power bus of the printer cable, and judges that the printer cable is unplugged when the voltage is not detected.

Wheeler discloses a detector that monitors a voltage of a power bus of the cable of an apparatus, and judges that the cable of the apparatus is unplugged when the voltage is not detected (column 5, lines 52-61 of Wheeler).

Kadota in view of Sakurai is combinable with Wheeler because they are from similar problem solving areas, namely detecting faults and unplugged cable connectors for information processing systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to detect the power, and thus voltage, of an apparatus connection in order to determine if the apparatus is unplugged, as taught by Wheeler, wherein the apparatus is specifically the printer connected by a printer cable taught by Kadota. The motivation for doing so would have been to ascertain the status of the apparatus (column 5, lines 54-58 of Wheeler), which is important in determining error conditions in the printer taught by Kadota (column 10, lines 1-8 of Kadota). In both Wheeler and Kadota, if there is a system error, it is desirable that said error be reported so that said error can be corrected. By detecting the power of an apparatus connection, as taught by Wheeler, the error detection can be performed automatically. Therefore, it would have been obvious to combine Wheeler with Kadota in view of Sakurai to obtain the invention as specified in claims 27 and 35.

**6. Claims 29 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kadota (US Patent 5,684,934) in view of Sakurai (US Patent 5,924,802) and Takeoka (US Patent 6,665,082 B1).**

**Regarding claims 29 and 37:** Kadota in view of Sakurai does not disclose expressly that the print start signal is a predetermined string which the computer transmits before a start of the transmission of the printing data.

Takeoka discloses that the print start signal is a predetermined string (figure 2(25C) and column 10, lines 15-21 of Takeoka) which the computer transmits before a start of the transmission of the printing data (column 6, lines 60-67 of Takeoka). The device ID data is part of the data that is transmitted (column 10, lines 15-21 of Takeoka) and is transmitted as part of the cycle-start packet, which is

transmitted first (column 6, lines 60-67 of Takeoka), and therefore before the transmission of the printing data.

Kadota in view of Sakurai is combinable with Takeoka because they are from the same field of endeavor, namely the control of printers and printing data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically transmit a predetermined string before the start of the transmission of the printing data, as taught by Takeoka. The motivation for doing so would have been to identify the printing data as such, so that the printing data is not lost while the printer performs printing-related preparations (column 5, lines 8-12 and lines 23-30 of Takeoka). Therefore, it would have been obvious to combine Takeoka with Kadota in view of Sakurai to obtain the invention as specified in claims 29 and 37.

**7. Claims 30 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kadota (US Patent 5,684,934) in view of Sakurai (US Patent 5,924,802) and Ryu (US Patent 5,978,921).**

**Regarding claims 30 and 38:** Kadota discloses that the data buffer clearing is performed automatically based on the detected errors (column 10, lines 35-52 of Kadota).

Kadota in view of Sakurai does not disclose expressly that the printer does not have a power switch for a user to turn ON/OFF a power supply.

Ryu discloses the control of the power of a peripheral device by the computer system (figures 7A-7B and column 6, lines 30-34 of Ryu), and therefore by computer software embodied in said computer system.

Kadota in view of Sakurai is combinable with Ryu because they are from the same field of endeavor, namely the control of computer peripheral devices. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use software to control the power of the peripheral, as taught by Ryu, said peripheral being the printer taught by Kadota in view of Sakurai. Since software is used to control the power of the printer, and not a power switch, then the printer would not have a power switch for a user to turn ON/OFF a power supply. The motivation for doing so would have been to save electrical power when a peripheral device is not in use (column 1, lines 13-18 of Ryu). Therefore, it would have been obvious to combine Ryu with Kadota in view of Sakurai to obtain the invention as specified in claims 30 and 38.

8. **Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kadota (US Patent 5,684,934) in view of Sakurai (US Patent 5,924,802) and well-known prior art.**

**Regarding claim 41:** Kadota discloses a printer (figure 2A of Kadota) comprising an interface (figure 2A(45) of Kadota) configured to connect to a computer (figure 2A(20) of Kadota) via a data line (line connected elements 20 and 32 in figure 2A of Kadota) for printing data (column 7, lines 41-43 of Kadota) and a bus line (figure 2A(54) and column 7, lines 30-37 of Kadota); a data buffer (figure 2A(46) of Kadota) configured to temporarily store the printing data received from the computer (column 7, lines 41-43 of Kadota); a referrer (figure 2A(35) of Kadota) configured to refer to an information (printing error) based on the bus line (column 10, lines 5-8 of Kadota) regardless of whether a transmission of printing data has started (column 10, lines 1-13 of Kadota -- *monitoring of status data is performed even before any transmission of printing data*), wherein the referrer judges that the data line upstream of the data buffer (element 35 (referrer) is clearly upstream of element 46 (buffer) in figure 2A of Kadota, and thus also is the connecting data line) shows a printing error based on the information (column 10, lines 1-8 of Kadota); and a clearer (figure 2A(49) and column 7, lines 58-61 of Kadota) configured to clear the data buffer if the printing error occurs (column 10, lines 1-8 of Kadota) after the transmission of the printing data has started (column 10, lines 35-52 of Kadota), and not to clear the data buffer if the printing error occurs when the transmission of the printing data has not started (column 10, lines 29-34 of Kadota).

Kadota does not disclose expressly that said interface is specifically a USB interface; that said bus line is specifically a VBUS line; and that said printing error is specifically that a printer cable is unplugged, where the printer cable is adapted to connect to a computer.

Sakurai discloses determining a printing error if a printer cable is unplugged, the printer cable adapted to connect to a computer (figure 5(S105) and column 6, lines 5-10 of Sakurai).

Kadota and Sakurai are combinable because they are from the same field of endeavor, namely the control and processing of printer data under conditions of printer error. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the printer error taught by Kadota be specifically that a printer cable, which is connected to a computer, is unplugged, as taught by Sakurai. The suggestion for doing so would have been that an unplugged printer cable is clearly an error condition since a printer cannot properly receive the print data from the host computer if there is no printer cable connection. Therefore, it would have been obvious to combine Sakurai with Kadota.

Kadota in view of Sakurai does not disclose expressly that said interface is specifically a USB interface; and that said bus line is specifically a VBUS line.



**Official Notice is taken** that USB interfaces and VBUS lines are old, well-known and expected in the art. At the time of the invention, it would have been obvious to one of ordinary skill in the art to specifically use a USB interface to connect to the computer; and to use a VBUS line for routing data for printing and printer error monitoring. The suggestion for doing so would have been that USB interfaces and VBUS lines are ubiquitous in the art, and would thus be common engineering choices when designing a printing system. Thus, one of ordinary skill in the art at the time of the invention would have modified the system set forth by the combination of Kadota and Sakurai to obtain the invention as specified in claim 41.

### *Conclusion*

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
  - a. Nishikawa et al., US Patent 5,148,284, Patented 15 September 1992.
  - b. Kageyama et al., US Patent 5,664,074, Patented 02 September 1997.
10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

James A. Thompson  
Examiner  
Technology Division 2625



20 March 2007



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